AMENDMENTS TO THE CLAIMS

Please amend the claims as set forth in the following listing of claims, which replaces all prior versions and listings of the claims.

1. (Currently Amended) A method of manufacturing fine particles, comprising the steps of:

supplying reactants and gas into a flame produced by a burner;

generating particle nuclei by reactions of the reactants in the flame;

forming aggregates including said particle nuclei by a collision and combination of said particle nuclei with each other in said flame;

irradiating at least one laser beam into said aggregates with a power level of the laser beam sufficient to cause said aggregates to coalesce and convert said aggregates into smaller fine, substantially spherical particles; and

wherein said laser beam ~~is irradiated into the flame in a direction perpendicular to a direction in which said fine particles move~~ has a wavelength selected so as to be generally coincident with said aggregates but not with said gas such that said laser beam is generally absorbed by said aggregates but not by said gas.

2-9. (Canceled)

10. (Previously Presented) The method according to Claim 1, wherein collision cross sections of said aggregates are greater than collision cross sections of the fine particles produced from said aggregates.

11. (Previously Presented) The method according to Claim 1, further comprising a step of setting the power level of said laser corresponding to a phase of the fine particles thereby controlling the phase of the fine particles.

12. (Currently Amended) A method of manufacturing nanoparticles comprising:

supplying reactants and gas into a flame produced by a burner;

generating particle nuclei by reactions of the reactants in the flame;

forming aggregates including pluralities of said particle nuclei by collision and combination of said pluralities of said particle nuclei with each other in said flame;

irradiating at least one laser beam onto said aggregates in the flame at a position below the top of the flame; and

adjusting a power level of said at least one laser beam sufficient to cause said aggregates to coalesce and convert into smaller fine, substantially spherical particles,

wherein said laser beam has a wavelength selected so as to be generally coincident with said aggregates but not with said gas such that said laser beam is generally absorbed by said aggregates but not by said gas.

13. (Previously Presented) The method according to Claim 12 additionally comprising collecting the fine spherical particles onto a member above the flame.

14. (Previously Presented) The method according to Claim 13, wherein the step of irradiating comprises directing the laser such that the laser beam does not intersect a position at which said fine spherical particles collect on the member.

15-16. (Canceled)

17. (Previously Presented) The method according to Claim 11, additionally comprising setting the power level such that the temperature of the fine particles does not reach their melting point.

18. (Previously Presented) The method according to Claim 11, additionally comprising setting the power level such that it is sufficient to raise the temperature of the fine particles above their melting point.

19. (Previously Presented) The method according to Claim 12, additionally comprising setting the power level such that the temperature of the fine spherical particles does not reach their melting point.

20. (Previously Presented) The method according to Claim 12, additionally comprising setting the power level such that it is sufficient to raise the temperature of the fine spherical particles above their melting point.

21. (Currently Amended) A method of manufacturing fine particles, comprising the steps of:

supplying reactants and gas at a flow rate into a flame produced by a burner such that particle nuclei are generated by reactions of the reactants in the flame and aggregates are formed;

irradiating at least one laser beam into said aggregates in the flame at a power level sufficient for said aggregates to coalesce and convert into smaller fine particles, said laser beam having a wavelength selected so as to be generally coincident with said aggregates but not with said gas such that said laser beam is generally absorbed by said aggregates but not by said gas; and

positioning said at least one laser beam to irradiate into the flame at a distance from said burner, wherein said distance has a positive correlation to said flow rate.

22. (Currently Amended) A method of manufacturing fine particles, comprising the steps of:

supplying reactants and gas into a flame produced by a burner such that particle nuclei are generated by reactions of the reactants in the flame and aggregates are formed;

directing a laser beam for a first pass through the flame at a first distance from said burner; and

redirecting said laser beam for a second pass through the flame at a second distance from said burner;

wherein a power level of said laser beam is sufficient for said aggregates to coalesce and convert into smaller fine particles as a result of the ~~combined~~ first and second passes of the laser beam through the flame, said laser beam having a wavelength selected so as to be generally coincident with said aggregates but not with said gas such that said laser beam is generally absorbed by said aggregates but not by said gas.

23. (Previously Presented) The method of Claim 22, additionally comprising selecting said second distance to be further from the burner than said first distance.

24. (New) The method of Claim 1, wherein a frequency of the laser beam is selected such that laser absorption by the gas is relatively small and results in a relatively small increase in gas temperature.

25. (New) The method of Claim 24, wherein the increase in gas temperature is approximately 40 degrees Celsius.

26. (New) The method of Claim 12, wherein a frequency of the laser beam is selected such that laser absorption by the gas is relatively small and results in a relatively small increase in gas temperature.

27. (New) The method of Claim 26, wherein the increase in gas temperature is approximately 40 degrees Celsius.

28. (New) The method of Claim 21, wherein a frequency of the laser beam is selected such that laser absorption by the gas is relatively small and results in a relatively small increase in gas temperature.

29. (New) The method of Claim 28, wherein the increase in gas temperature is approximately 40 degrees Celsius.

30. (New) The method of Claim 22, wherein a frequency of the laser beam is selected such that laser absorption by the gas is relatively small and results in a relatively small increase in gas temperature.

31. (New) The method of Claim 30, wherein the increase in gas temperature is approximately 40 degrees Celsius.